

REMARKS

Reconsideration of this application as amended is respectfully requested.

In the Office Action, claims 1-26 remain pending. Claims 1-21 and 24-26 have been rejected. Claims 22 and 23 are objected. In this response, claim 22 has been canceled without prejudice. Claims 1, 9, 17, 23, and 25-26 have been amended to particularly point out and distinctly claim, in full, clear, concise, and exact terms, the subject matter which Applicant regards as his invention. No new matter has been added.

Claims 22 and 23 have been objected to under 37 C.F.R. 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claims 22 and 23 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In view of the foregoing amendments, it is respectfully submitted that the objections has been overcome.

The Office Action has rejected claims 1, 9, 17, 25 and 26 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Office Action stated that the limitation of provisioning an alternate path to the destination was not supported by the specification (see e.g., 10/4/2007 Office Action, page 10). Applicant respectfully disagrees. It is respectfully submitted that the present invention as claimed is fully supported by the specification of the present application.

It is respectfully submitted that the present invention as claimed is all about how to reduce the failure recover time by shortening time to notify a source node of an optical circuit of the failure in order to allow the source node to quickly provision another path to reach the same destination of the optical circuit (see e.g., paragraph [0002] of the present application).

It is respectfully submitted that one with ordinary skill in the art, based on the teachings of the present application, would understand the present invention as claimed.

In addition, as described in paragraph [0029] of the specification, a path can be provisioned according to techniques described in incorporated by reference U.S. Patent Application No. 10/754,931 (corresponding U.S. published application No. 20040247317, hereinafter the '317 application), which provides sufficient support to the present invention as claimed.

Specifically, the '317 application states:

The reduced network topology database size (as compared to a physical network topology database) and distributed nature of this source based scheme allows for the provisioning of optical circuits in real-time (or on the fly; that is, the demands do not need to know ahead of time). Such real-time provisioning of optical circuits allows for a redundancy (protection) scheme referred to herein as optical reroutable. In the optical reroutable redundancy scheme, upon learning of a failure affecting an optical circuit, a new optical circuit is provisioned in real time and the traffic moved to it. For example, in certain embodiments of the invention in which the optical network includes optical network nodes that have optical cross-connects, upon learning of a failure affecting a given optical circuit, one end node of that optical circuit (e.g., the one that originally received the demand that caused the provisioning of that optical circuit) causes the provisioning of a new optical circuit in real time and both end nodes move the traffic to it. By way of particular example, in such embodiments of the invention that use a source based scheme and are conversion free, upon learning of a failure affecting a given optical circuit, the end node that originally received the demand causes the provisioning of a lightpath in either direction (where both lightpaths share the same path to the other end node) and both end nodes switch the traffic to these lightpaths.

(the '317 application, paragraph [0139], emphasis added).

Thus, the incorporated '317 application clearly provides sufficient support to the present invention as claimed.

The Office Action has rejected claims 1-5, 7-13, 16-21 and 24-26 under 35 U.S.C. § 102(a) as being anticipated by ITU-T G.664 ("ITU '664 article"). Claims 1, 6, 9, 14 and 15 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Publication No.

In view of the foregoing amendments, similar to the remarks previously submitted, it is respectfully submitted that the present invention as claimed includes limitations that are not disclosed by the cited references.

Specifically, for example, independent claim 1 as amended recites as follows:

1. A method performed by a node of a wavelength multiplex optical network, the method comprising:
detecting at a node that at least a portion of a first unidirectional path of an optical circuit is down, the first unidirectional path being originated from a first terminating node for reaching a second terminating node as a destination of the first unidirectional path; and
signaling the first terminating node by removing at least a portion of light of a second unidirectional path in an opposite direction of the first unidirectional path of the optical circuit, to indicate a path between the node and the first terminating node is down, wherein in response to lost of the at least a portion of light, which is used as an indication of lost of signal (LOS), the first terminating node is configured to provision another path to reach the second terminating node as the same destination of the first unidirectional path, bypassing at least one node between the first terminating node and the second terminating node of the first unidirectional path.

(Emphasis added)

Independent claim 1 includes limitations of detecting at least a portion of a unidirectional path (e.g., certain wavelengths of a light path) is down and in response, signaling a terminating node that originates the path (e.g., source node) by removing at least a portion of the light. When the source node receives the signal by not seeing the light of the corresponding wavelength of the path, the source node can provision another path (e.g., a redundancy path or a protection path) to reach the same destination of the failed path, bypassing at least one node between the source and destination nodes of the failed path (e.g., the node that malfunctions).

That is, the present invention as claimed is related to provision another path to go around the failed path using the lost of the light as a signal, similar to the lost of signal (LOS) used in a conventional system which is specifically used to notify another node that a path is down and another path is requested. In this embodiment, since there is no need to specifically generate additional signal for the purposes of signaling the source node to provisional another path, the speed to provision a new path will be greatly improved. It is respectfully submitted that these limitations are absent from the cited references.

Rather, both references are related to shutting down the light of a fiber that is broken for safety reasons, instead of provisioning another path in place of the failed path as recited in claim 1.

For example, the ITU '664 article states:

“APR procedures are required in order to avoid hazards from laser radiation to human eye or skin and potential additional hazards such as temperature increase (or even fire) caused by locally increased absorption to connector pollution or damage.

...

In order to ensure that the power levels emitting from broken or open fibre connections are at safe levels, it is necessary to reduce the power not only on the main optical signal sources but also on all pump-lasers employed, including the backward pumping lasers.” See, e.g., the ITU '664 article, page 5.

Similarly, Iwaki discloses using ALS (automatic laser shutdown) techniques to cut off the leaked laser light resulted from the failed path. See, e.g., paragraphs [0005] – [0008] and [0022] – [0031] of Iwaki.

In contrast, the present invention as claimed is related to provide a redundancy or protection path which is provisioned in response to a path failure, where the path failure is detected by detecting lost of light as a signal that normally has to be transmitted specifically for such a purpose in a conventional system. None of the cited references, individually or in combination, discloses or suggests the limitations set forth above. Therefore, it is respectfully

submitted that independent claim 1 as amended is not anticipated by the ITU '664 article and Iwaki.

Similarly, independent claims 9, 17, and 25-26 as amended include limitations similar to those recited in claim 1. Thus, for reasons similar to those discussed above, it is respectfully submitted that independent claims 9, 17, and 25-26 as amended are not anticipated by the ITU '664 article and Iwaki.

Given that the rest of the claims depend from one of the above independent claims, for reasons similar to those discussed above, it is respectfully submitted that the rest of the claims are not anticipated by the ITU '664 article and Iwaki. Withdrawal of the rejections is respectfully requested.

In view of the foregoing, Applicant respectfully submits the present application is now in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call the undersigned attorney at (408) 720-8300.

Please charge Deposit Account No. 02-2666 for any shortage of fees in connection with this response.

Respectfully submitted,

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